

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claim 44 in accordance with the following:

1-6. (CANCELED)

7. (PREVIOUSLY PRESENTED) A decoding apparatus, comprising:

a first soft decoder performing a first soft decoding of input data to correct errors in the input data and outputting first soft-decoded data;

a de-interleaver de-interleaving the first soft-decoded data corresponding to an interleaving order used upon encoding;

a second soft decoder receiving the first soft-decoded data, performing a second soft decoding of the first soft-decoded data, and outputting second soft-decoded data and additional information indicating a success or failure of the decoding of the first soft-decoded data; a hard-decision unit performing, according to the additional information, a hard-decision for successfully decoded data of the second soft-decoded data to restore original data;

a reserving unit reserving a portion of non-decoded data of the second soft-decoded data for the first soft-decoded data to be inserted into:

an interleaver performing interleaving of the data, and outputting the interleaved data; and

a data insertion unit inserting an output of the first soft-decoder in the portion of the interleaved data output from the interleaver and feeding back resulting data indicative thereof to the first soft decoder,

wherein the first soft-decoder performs repeated decoding.

8. (ORIGINAL) The decoding apparatus of claim 7, wherein the first soft decoder uses a turbo decoding method.

9. (ORIGINAL) The decoding apparatus of claim 7, wherein the second soft decoder

uses a Low Density Parity Check (LDPC) decoding method.

10. (ORIGINAL) The decoding apparatus of claim 7, wherein the first soft decoder repeatedly decodes the second soft-decoded data fed back in response to the additional information indicating the failure of the decoding.

11-27. (CANCELED)

28. (PREVIOUSLY PRESENTED) A decoding method, comprising:
performing a first soft decoding of input data to correct errors in the input data and outputting first soft-decoded data;
de-interleaving the first soft-decoded data corresponding to an interleaving order used upon encoding;
performing a second soft decoding of the first soft-decoded data;
outputting the second soft-decoded data and additional information indicating a success or failure of the decoding of the first soft-decoded data; and
according to the additional information performing a hard-decision to successfully decode the data of the second soft-decoded data to restore original data, reserving a portion of non-decoded data of the second soft decoded data for the first soft-decoded data to be inserted into, interleaving the data, and outputting the interleaved data;
inserting the first soft-decoded data in the portion of the interleaved data; and
performing the first soft decoding of the resulting data, wherein the first soft-decoding is performed repeatedly.

29. (ORIGINAL) The decoding method of claim 28, further comprising:
implementing the first soft decoding using a turbo decoding method.

30. (ORIGINAL) The decoding method of claim 28, further comprising:
implementing the second soft decoding is using a Low Density Parity Check (LDPC) decoding method.

31. (ORIGINAL) The decoding method of claim 28, wherein the first soft-decoding further comprises:
performing repeated decoding of the second soft-decoded data fed back in response to

the additional information indicating the failure of the decoding.

32-43. (CANCELED)

44. (CANCELED)

45. (CANCELED)